

REVIEW.

GASTEROMYCETES OF SOUTH AFRICA. By A. M. Bottomley. Bothalia, Vol. IV, Part III, pp. 473-810, including 79 photographic plates. Government Printer, Pretoria, 1948. Price 7/6d.

We have received with much pleasure Vol. IV, Part III of "Bothalia," which contains a monograph of the Gasteromycetes of South Africa by A. M. Bottomley, and we congratulate Miss Bottomley on the completion of a very difficult task. She modestly disclaims to have produced a critical revision of this puzzling group of fungi, but she has put together all the known South African records and described each species in what we may call the traditional manner, since no new tricks such as chemical reactions to flesh and spores have yet been found to help in diagnosis, as they do in the Agarics. Keys have been provided to run down genera and species. She has indeed written a work that was badly needed and which all mycologists will be glad to possess. The general classification is that of G. H. Cunningham. Full citations and authors are given. In addition to the text there are photographs to illustrate most of the species, and that adds considerably to the practical character of a work of this kind. Indeed without these it would be difficult in many cases to determine with any conviction many of the species, which are so often without strikingly distinct diagnostic characters.

We should have liked a few diagrammatic drawings or micro-photographs to illustrate more clearly the gleba of some of the genera, the photographs in this respect giving little or no information, and, of course, coloured drawings of the brightly-coloured species would have been welcome—but in these days the cost of such plates is prohibitive. A second index based on specific epithets would also have been useful. A few slips have been made in the proof-reading. The Clathraceae have been omitted from the general key to the families and genera. In the glossary a micron is defined as 1/1000 of an inch instead of a millimetre.

Five species new to science are described: *Lycoperdon Duthiei*, *L. Oudenii*, *Calvatia incerta*, *Bovista umbrina*, and *Geastrum dissimile*. The generic epithet *Geastrum* (Persoon, 1801) replaces the more familiar *Geaster* (Fries, 1829) since the nomenclature of the Gasteromycetes starts from Persoon.

Two species can be added to the list, *Geastrum rufescens* Pers. and *Phallus imperialis* Schulzer, both observed by Miss E. L. Stephens and the writer during the ten weeks he spent at the Cape. Brief descriptions of these are added below for the convenience of those using Miss

Bottomley's work. In view of the solitary and very old record ("outside Cape Town, Thunberg") of *Calvatia gigantea* (*Lycoperdon giganteum*) it should be mentioned that specimens of this species were collected at Stellenbosch on the 29th of May, 1948.

Miss Bottomley's excellent monograph should be an incentive to further research in South Africa, which is peculiarly rich in puff-balls of all kinds and phalloids. It is printed by and may be obtained from the Government Printer, Pretoria, as a separate part of "Bothalia," at the low price of 7/6d., post free.

Geastrum rufescens Pers.

Exoperidium up to 8 cm. wide when expanded, with 6—10 acute lobes split to the middle or beyond, rigid, thick, firm, pale ochraceous above with a pink flush, fleshy layer thick, soon cracking, often peeling. *Endoperidium* 2—3 cm. wide, yellowish or pale brown, globose or ovoid, sessile or with a short rudimentary stem. *Mouth* indefinite, fibrillose or torn. *Spores* globose, about $4\ \mu$, echinulate, olivaceous brown. *Columella* globose, short, olive-brown. *Capillitium* olivaceous, simple, 6—7 μ diameter.

Habitat: Woods and pastures. Bergvliet, Retreat, Cape Peninsula, 2nd May, 1948.

Phallus imperialis Schulzer.

Peridium $2\frac{1}{2}$ —7 cm., smooth at first, ovoid, pink, with a cord-like mycelium below, splitting at the apex into two or more lobes and remaining as a persistent volva at the base of the stem. *Stem* (receptacle), 10—16 cm. high (recorded to 25 cm. in Europe), 2—3 cm. diameter, cylindrical or ventricose, white, turning a very pale buff, hollow, soft, spongy and pitted with shallow holes. *Pileus* 3—5 cm. high, white but covered with greenish-black gluten or mucus, adnate, conical, reticulate-alveolate, the ridges of the net shewing white through the gluten and with a white cup-like apex which is the hollow top of the stem; base usually oblique. At the base of the stem is a thin white membranous sheath surrounded by a soft brownish-hyaline jelly, all enclosed by the pink peridium. *Smell* strong but pleasant, of new meal or raw liquorice (*Glycyrrhiza*). *Spores* hyaline, cylindric, smooth, $2\frac{1}{2}$ — $3\frac{1}{2} \times 1\frac{1}{4}$ — $1\frac{1}{2}\ \mu$.

Habitat: Solitary or in troops on lawns or bare soil of gardens. Wynberg, C.P., 22nd May, 1948. Plumstead, C.P., 9th June, 1948.

This species is included by Miss Bottomley among the synonyms of *Phallus impudicus*, of which she says "it seems a bit doubtful if the species occurs in South Africa"; but it differs in both smell and colour.

A. A. PEARSON.